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June 3, 2004

Ms. Marlene Dortch
Secretary
Federal Communications Commission
445 12th Street, SW, TW-A325
Washington, DC 20554

Re: CC Dkt. 99-273, Provision of Directory Listing Information

Dear Ms. Dortch,

On June 3, 2004 the undersigned and Judy Mewbourne of BellSouth, Cronan O'Connell, Clark Conniff, and Joan O'Donnell of Qwest, Bob Lyons, Ann Berkowitz, and Leslie Owsley of Verizon, and Toni Acton and Mike Yoest of SBC, met with Bill Dever, Rodney McDonald, Kim Jackson, and Marilyn Jones of the Wireline Competition Bureau. Harold Ware of NERA participated via conference call. The purpose of the meeting was to discuss a variety of issues associated with the retail directory assistance market. All material used during the meeting is attached.

This notice is being filed pursuant to Sec. 1.1206(b)(2) of the Commission's rules. If you have any questions regarding this filing please do not hesitate to contact me.

Sincerely,

Mary L. Henze

cc: B. Dever
R. McDonald
K. Jackson
M. Jones

Competition in the US Directory Assistance Market

Competition in the DA market is robust

- **Wireline Phones** – All major long distance carriers continue to provide DA via (NPA) 555-1212 calling pattern. In virtually all states there are a minimum of 4 local telephone companies to choose service from, all of which provide Directory Assistance through their own centers or from a wholesale DA service provider.

- **Wireless Phones -** penetration will exceed 180 million subscribers by 2005. DA usage in the wireless market has been growing at 10 percent per year and is estimated to surpass wireline DA usage within the next two years.

- **Phone Books** – Over 4500 books published annually with an estimated annual usage in excess of 13 Billion times.

- **Internet based services via PC and Wireless** – Over 160 Million users in the United States Market. Estimates point to over 3 Billion uses annually for white page look-up.

- **VoIP** – Growing acceptance of VoIP technology will drive tremendous usage of service and peripheral services like Directory Assistance.

- **Personal Directories/SMS –** Current estimates suggest usage of 4 times per week for listing information. Short Message Service increasingly used to capture listing information electronically for storing in hand-held device.

Dramatic decreases in RBOC voice DA volumes over the last 5 years clearly point to consumer acceptance and use of alternative methods to acquire DA information

- All of the RBOCs have seen significant erosion in DA call volumes over the past 5 years, most approaching 50% plus volume declines. Consumers are using the vast array of alternatives currently available to them. Studies by Frost and Sullivan, Pelorus and others have concluded that the wireline DA market is in steady decline.

- Lifestyle changes, particularly as it relates to the use and convenience of wireless technology has dramatically impacted the consumer's use of wireline DA.

- InfoNXX's InfoSave Service and similar services from others have made tremendous progress in selling nationwide DA solutions to large corporations and government entities. These solutions allow customers to select their DA service from numerous providers with a variety of service options.

- According to industry sources, the estimated total number of local wireline directory assistance calls made in the United States in 2003 was 3.96 billion calls. And, the estimated revenue from those calls was $2.3 billion. The U.S. wireline DA market will continue to see significant declines in revenue and volume as consumers continue to shift away from wireline based DA services.

There are no substantive barriers to entry

- There are a significant number of well capitalized inter and intramodel providers.

- Regulatory requirements and market pressure ensure competitors have non-discriminatory access to listing data

- Firms can rapidly assemble inputs (labor, computers and other call center investments) needed to provide DA service.

- Firms can and do use 800 dialing to provide DA.

- Since May 2003, two companies have begun to provide retail DA services via 800 numbers that can be accessed from any wireline (or wireless) telephone – Easy411 which is dialed via 877EASY411 and Infone provided by Metro One Telecommunications via 800 411 1111.

Quality of US Directory Assistance

DA Quality in the United States is excellent:

- **Negligible complaints based on millions of daily calls**
    - BellSouth: only 6 FCC complaints in 5 years
    - Qwest: only 3 FCC complaints in 2 years
- **Third party audits reflect accuracy rates in the mid 90's**
    - "Based upon the results of the October 2002 NDA Performance Index[sm], industry average for Customer Fulfillment[sm], exceeds 90%. Thirteen DA providers were audited for this issue."
    - "Based on the database accuracy results reported in the October 2002 NDA Performance Index[sm], the OLEC (in-region), ILEC (national) and 3rd Party national database accuracy levels have almost converged. They are 96.3%, 95% and 94.3% respectively." (Source: The Paisley Group Ltd, January 2003 exparte)
- **Third party Customer Satisfaction Survey in BellSouth, January 2004, reflects high customer satisfaction with the service they are receiving:**
    - 98.0% said the operator responded appropriately throughout the call
    - 99.7% said the operator sounded professional
    - 98.3% said the operator understood the request and searched correctly
    - 96.3% rated BellSouth an "A" or "B"
- **State service requirements drive answer times and vary by state**
    - BellSouth: ranges from 4.4-11 seconds
    - Qwest: ranges from 6-10 seconds
    - SBC: ranges from 5.6-12 seconds
- **Quality assurance and monitoring**
    - Onsite and remote quality assurance monitoring
- **Incentive-based pay on accuracy and courtesy**
- **Ubiquitous/reliable service**
    - Service is provided equally to all

Directory Assistance Pricing Trends

- Assertions that "European style competition" will cause a decrease in DA prices are not supported by the facts.

- Claims that DA prices have increased while all other telephone rates have declined are misleading. Rates for basic local and basic (low-usage) toll services have in fact increased.
    - This reflects the realization that introduction and expansion of competition require elimination of subsidies and, thus, drives some rates higher for some customers.
    - In states that still regulate DA rates, the effective price per call—taking account of the calling allowance—still averages only about 9 cents. This is far below the cost for such calls.

- Thus, it is not surprising that rates for DA calls have increased as regulators have reduced regulation and ILECs were allowed to reduce or eliminate subsidies by:
    - Eliminating or reducing calling allowances that provide for "free" DA calls
    - Increasing prices for DA calls.

- These factors have contributed to an increase in the DA price index since the 1996 Act was passed. But this is a reflection of deregulation by some commissions that have recognized that market forces should be allowed to govern DA rates.

- Nevertheless, US DA prices have increased by no more than the rate of general inflation. That is, they have stayed the same when adjusted for inflation. More specifically:
    - The PPI for DA increased by 20 percent, or at an average annual rate of only about 2.3 percent per year, from December 1995 to December 2003.
    - The overall rate of inflation, the CPI, increased by about 20 percent in the same time period.

- The effective overall average of residence ILEC DA rates in US is now only about $0.43 per call. This factors calling allowances and includes all jurisdictions. [Calculations are documented in *Directory Assistance Pricing Trends, National Economic Research Associates, Inc., June 4, 2004*; Supporting data are attached]

- Rates in UK (and other EU countries), which changed calling codes and allowed incumbent to deregulate its rates are higher than the average in the US. Even when we confine the analysis to states that have reduced regulation in the US, we find that rates are still lower than they are in UK.

ILEC Local Rates Compared to Benchmarks

	Average $ Per DA Call	Range $ Per DA Call	
		Low	High
ILEC Competitive Price Regulation	$0.70	$0.00	$1.25
ILEC Overall Average	$0.43	$0.00	$1.25
US IXC	$1.64	$0.75	$2.49
US Wireless Mobile	$1.21	$0.99	$1.29
UK DA Rates	$0.87	$0.44	$3.21
European DA Rates	$1.14	$0.56	$1.52

Examples of rates for the two largest service providers in the UK are:

- The Number 118118 (INFONNX) $1.04
- British Telecom 118500 $ .96
  (Based on a 50 second call)

There is no support for the concept that "European style competition" will cause a reduction in US DA rates. It could however very well cause further erosion in an already shrinking market and subject US consumers to poor service and surprisingly high rates.

European Directory Assistance Experience

Europe is striving to provide what already exists in the U.S.: choice and quality

Result of introducing DA competition via regulatory means has been very mixed

UNITED KINGDOM

- **In the UK, the average cost per DA call increased by 30 percent after the introduction of competition**

  "I have found it so confusing to find which is the cheaper service, that now I just go on the net, and look at directory enquiries there." (Source: Teething Troubles: Your 118 stories, BBC News, 08.22.03)

- **UK customers experienced significant confusion**

  "It's a bloody mess" (Source: Why Britain Has 57 Ways to Get The Wrong Number – Bid for Competition Unleashes Wave of Misinformation: Hanging Up for a Bonus, The Wall Street Journal, 10.24.03)

  "Hours after the abolition of the old directory inquiries number, people have started to swap stories of inept operators, dud information and hidden charges." (Source: Daily Telegraph Editorial, 08.25.03)

- **A recent, independent study found UK quality to have improved to 75% accuracy**

  "Although, by all accounts, the chances of getting the right number have since improved, it is still difficult to know what you are being charged, with calls from mobile networks sometimes costing double." (Source: Directory enquiries market boils over, Ed Petter – BBC Money Programme, 05.19.04)

- **Recent research suggests that call volumes have declined by as much as 50% since the introduction of competition**

  "Research by the 118 Tracker organization suggests that the number of calls to directory enquiries has fallen by about half since deregulation" (Source: Directory enquiries market boils over, Ed Petter – BBC Money Programme, 05.19.04)

European Directory Assistance Experience
(continued)

GERMANY

- **Germany has ended up with higher prices and a 45% percent decline in call volume over the past 5 years**

"'In Germany, they started off with 26 DQ providers, and now there are only two,' says a spokesman for Telegate." (Source: Crossed lines in the numbers game, Rosie Murray-West, telegraph.co.uk, 05.17.03)

"The lessons from deregulated Europe are clear," the Zelos Group states, "prices will go up, not down. Quality and customer satisfaction will take a hit." (Source: The Regulator's Dilemma: Competitive DA in UK backfires, Zelos Group, 2.20.03)

Directory Assistance – Regulatory Issues

- Basic 411 DA services have always been considered intrastate and regulated by the States
    - DA services were traditionally viewed as related to telephone exchange service and subject to State regulation (47 U.S.C. § 221(b))
    - States have set prices, terms, and conditions for offering LEC-provided basic 411 DA services
    - FCC has authority to designate 411 (or other numbers) for use to reach DA services (47 U.S.C. § 251(e)(1)), but no jurisdiction over the way service is provided, and no authority to require 411 presubscription
- InfoNXX (like other similar DA providers) is not a "carrier" and is not subject to common carrier regulations
    - Lack of ability to set free call allowances and require exemptions for certain classes of customers
    - Lack of ability to regulate answer times and other quality of service requirements
- DA providers have many alternatives for billing and collection, including commercially negotiated agreements with LECs, and LECs should not be required to bill for DA providers.
    - Commission long ago found that "billing and collection services provided by local exchange carriers are not subject to regulation under Title II of the Act."
    - There is no "statutory purpose" to justify requiring LECs to provide billing and collection under Title I
    - Commission has repeatedly found that LEC billing services are not "essential," that others offer billing services, and the marketplace for billing services is competitive

NARUC Directory Assistance Resolution
2004 Winter Meeting

- The NARUC Resolution supports DA competition but only if each State's authority over DA within its jurisdiction is preserved and only if there is no costly presubscription plan or surcharge

    - NARUC resolves that there should be NO impairment of the states' ability to

        a. Require each subscriber to receive a minimum number of free telephone inquires;
        b. Require that (consistent with FCC policy) disabled subscribers are able to access free telephone number inquiries; and,
        c. Regulate the retail price subscribers are charged by providers of DA for telephone number inquiries

- Consumers could lose those benefits as the states would not have jurisdiction over non-telecom providers.

411 Elimination/Presubscription

411 Should Not Be Eliminated

- The potential costs and consumer chaos far outweigh any presumed benefits:
    - 411 is nationally recognized as DA. Elimination of 411 dialing would cause momentous consumer upheaval
    - Due to consumer confusion and infrequent use of DA, 411 calls would still be dialed and need to be rerouted to special announcements
    - Significant technological change and equipment costs as well as uncompensated network usage of special routing announcements
    - Announcements will be unable to provide the caller with definitive instructions on how to complete the call to DA

Presubscription Would Be Extremely Costly

- The estimated cost to implement 411 presubscription industry-wide will be between $800 million and $1.2 billion...for something that has minimal consumer support
    - Substantial costs include: Making Switches AIN Capable, Certifying Switches Already Capable, DMS-100 (switch) Upgrades for 411 Trigger, AIN Signal Control Points (SCP) and Trunking, Modification of OSS to permit 411 presubscription, Balloting and Allocation Costs
    - Who would pay? Additional burden would ultimately affect consumer costs
    - Would consumers bother with presubscription? 80% of consumers use DA infrequently or not at all

Using 555 for Directory Assistance

- 555 Numbers can be used to provide Directory Assistance, however, potential costs and feasibility of widespread implementation cannot be determined until significant technical standards are resolved.
    - Implementation of nationwide or region-wide 555 calling ***requires*** adoption of industry standards.
    - Use of 555 for DA cannot be decided until standards are developed, costs are known, and cost v. benefit is assessed.

Status of Industry Standards

- The Network Interconnection Interoperability Forum (NIIF) of ATIS conducted preliminary work to identify potential technical service interconnection arrangements and dialing plans that could be used for 555.
    - Only guidelines that exist for 555 are for assigning numbers (INC 94-0429-002 Rev 1)
    - Critical network implementation guidelines have not yet been developed; no ATIS work is currently underway

- NIIF noted that completing 555 calls requires host of network technical requirements to enable carriers to:
    - accommodate a given dialing arrangement
    - appropriately translate the dialed numbering
    - route the call to the access customer or service providers
    - provide that customer or provider the necessary call-related information to support the desired services
    - record the necessary call detail
    - ultimately bill the call, and
    - provide blocking if appropriate

- There is no industry consensus on best technical approach to routing 555 numbers; multiple solutions are possible, including
    - Switched-Based Routing (End office, tandem)
    - IN/AIN
    - 950 FG-B

Using 555 for Directory Assistance
(continued)

- Each potential solution raises issues. For example, NIIF states that

  "Network service capabilities required to route 555 calls presently exist for some, but not all of the technical service interconnection arrangements described..."

  "Although switch based 7 or 10 digit translation is possible, this methodology requires additional switch memory and may be difficult to implement in some networks."

  "Although IN and AIN capabilities are increasingly available in some local exchange and interexchange carrier networks, they are not yet ubiquitous."

  "It should be further recognized that support of multiple technical service interconnection arrangements for 555 could have extensive technical network impacts and may not be practical or feasible for all network providers."

- Beyond routing the 555 call, industry standards must also be developed for:

  - Billing/charging processes and formats
  - Ordering processes
  - Trouble reporting processes
  - Vendor development for different signaling, billing, interfacing, blocking

The Cost to call UK Directory Enquiries Providers

June 2004

Number Provider	Tariff Type	Fixed Charge	First Minute	Cost Per Minute	Searches	USD Charge	
118848 118 UK 1 24 N 3	1	24			3	0.44	
118390 COLT 1 27 N 1	1	27			1	0.49	
118355 118866 Ltd 1 30 N 2	1	30			2	0.55	
118366 SevernTrent Services 1 30 N 1	1	30			1	0.55	
118811 The Number UK Limited 1 30 N 1	1	30			1	0.55	
118814 Energis Communications 1 30 N 1	1	30			2	0.55	
118288 Kingston Communications 1 32 N 3	1	32			3	0.59	
118023 BIS 1 35 N 1	1	35			1	0.64	
118099 Cable & Wireless Plc 1 35 Y 1	1	35			1	0.64	
118111 One Tel 1 35 N 1	1	35			1	0.64	
118113 Eckoh 1 35 N 1	1	35			1	0.64	
118136 VarTec Telecom - Need a Number 1 35 N	1	35			2	0.64	
118220 Reach Telecom 1 35 N 1	1	35			1	0.64	
118232 ICB 1 35 N 1	1	35			1	0.64	
118321 Tesco Directory 1 35 N 1	1	35			1	0.64	
118334 Damovo UK Ltd 1 35 N 2	1	35			2	0.64	
118350 Europacom 1 35 N 1	1	35			1	0.64	
118354 Swiftcall 1 35 N 1	1	35			1	0.64	
118383 Telecom Plus 1 35 N 1	1	35			1	0.64	
118455 FSB Directories 1 35 N 1	1	35			1	0.64	
118511 British Gas 1 35 N 1	1	35			1	0.64	
118700 Amcall 1 35 N 1	1	35			1	0.64	
118707 BT 1 35 Y 1	1	35			1	0.64	
118864 The Study 1 35 N 1	1	35			1	0.64	
118078 Johnston Press 1 40 N 1	1	40			1	0.73	
118114 Opal Telecom 1 40 N 1	1	40			1	0.73	
118189 Direct Response 1 40 N 1	1	40			1	0.73	
118225 Corporate Communications 1 40 N 1	1	40			1	0.73	
118508 PDQ - Viking Radio 1 40 N 1	1	40			1	0.73	
118592 Hurricanseye 1 40 N 2	1	40			2	0.73	
118823 Archant 118823 1 40 N 2	1	40			2	0.73	
118878 ntl 1 40 N 2	1	40			2	0.73	
118770 Telewest 1 50 N 2	1	50			2	0.92	
Tariff 1:							**0.65 Avg Charge**
Fixed charge - however long the call the cost is fixed.							**33 Providers**
118810 Energis Communications 2 30 N 1	2	30			1	0.55	
118247 Yell Limited 2 40 Y Unlimited	2			40	Unlimited	0.61	
118453 Gay & Lesbian Directory Enquiries 2 40 Y	2			40	Unlimited	0.61	
118373 Just Dial 2 35 Y 1	2	35			1	0.64	
118773 Transglobal Europe 1 35 N 1	2	35			1	0.64	
118429 118-GAY 2 50 N 3	2			50	3	0.76	
118487 118866 Ltd 2 50 N Unlimited	2			50	Unlimited	0.76	
118019 Solent & South Directories 3 25 20 N 2	2	25		20	2	0.76	
118865 Wavecrest 1 40 N 1	2	40			1	0.73	
118117 Eckoh 3 35 10 N 1	2	35		10	1	0.79	
118229 Cable & Wireless Plc 3 35 10 Y Unlimited	2	35		10	Unlimited	0.79	
118103 TelecomIT Directories 2 70 N Unlimited	2			70	Unlimited	1.07	
118184 Cable Direct Ltd 2 70 Y Unlimited	2			70	Unlimited	1.07	
118391 COLT 2 70 N Unlimited	2			70	Unlimited	1.07	
118428 Virtual 2 70 Y Unlimited	2			70	Unlimited	1.07	
118049 Babel Telecom 3 49 9 Y Unlimited	2	49		9	2	1.04	
118222 AT Communications 2 80 N Unlimited	2			80	Unlimited	1.22	
118375 Direct Response 2 80 N Unlimited	2			80	Unlimited	1.22	
118634 Cable Telecom 2 80 Y Unlimited	2			80	Unlimited	1.22	
Tariff 2:							**0.88 Avg Charge**
Time charge - this is based on how long you use the service, and is generally billed per second.							**19 Providers**
118554 BT 3 35 10 Y 2	3	25		10	2	0.61	
118877 Telco Directory Enquiries 3 30 5 Y 1	3	30		5	1	0.63	
118128 MCI WorldCom Ltd 2 35 N 2	3	35			2	0.64	
118559 Cable & Wireless 1 35 N 1	3	35			1	0.64	
118800 Directory Enquiries UK 3 29 9 Y Unlimited	3	29		9	Unlimited	0.67	
118030 Babel Telecom 3 25 18 N 2	3	25		18	2	0.73	
118242 Spitfire Network Services Ltd 3 25 18 N 2	3	25		18	2	0.73	
118825 O-Bit Directories 3 25 18 N 2	3	25		18	2	0.73	
118199 Cable & Wireless Plc 3 35 5 Y 1	3	35		5	1	0.72	
118200 NTT UK 3 200 10 Y Unlimited	3	35		5	1	0.72	
118560 Cable & Wireless 3 35 5 N 1	3	35		5	1	0.72	
118025 Arrow Communications 3 25 20 N 2	3	25		20	2	0.76	
118158 Starcomm 3 25 20 N 2	3	25		20	2	0.76	
118212 Maureen (Independent Radio News) 3 25 2	3	25		20	1	0.76	
118888 118 UK 3 25 20 Y Unlimited	3	25		20	Unlimited	0.76	
118234 Reach Telecom 3 35 10 Y 2	3	35		10	2	0.79	
118246 AT Communications 3 35 10 Y 1	3	35		10	1	0.79	

118400 Corporate Communications 3 35 10 Y 1	3	35	10	1	0.79	
118456 Glow Telecom 3 35 10 N 1	3	35	10	1	0.79	
118528 Telesoft 3 35 10 N 2	3	35	10	2	0.79	
118561 Cable & Wireless 3 35 10 Y 1	3	35	10	1	0.79	
118632 Middlesborough FC 3 35 10 Y 1	3	35	10	1	0.79	
118737 Babel Telecom 3 35 10 Y 2	3	35	10	2	0.79	
118774 Transglobal Europe 3 35 10 Y 1	3	35	10	1	0.79	
118806 Easi-Tel 3 35 10 Y 2	3	35	10	2	0.79	
118183 Cable Direct Ltd 3 25 26 Y 1	3	25	26	1	0.85	
118687 Babel Telecom 3 39 9 Y 1	3	39	9	1	0.85	
118696 Magrathea 3 39 9 N 2	3	39	9	2	0.85	
118832 Babel Telecom 3 39 9 Y 2	3	39	9	2	0.85	
118005 NTT UK 3 25 30 Y 2	3	25	30	2	0.92	
118006 Badger Business Services 3 25 30 Y 2	3	25	30		0.92	
118119 192.com 3 25 30 Y 2	3	25	30	2	0.92	
118180 Telewest 3 25 30 Y 2	3	25	30	2	0.92	
118181 Smile Assistance 3 25 30 Y 2	3	25	30	2	0.92	
118218 Azzurri Communications 3 25 30 Y 2	3	25	30	2	0.92	
118308 Barclays Bank 3 25 30 N 1	3	25	30	1	0.92	
118318 EDNET 3 25 30 N 2	3	25	30	2	0.92	
118374 Cable Telecom 3 25 30 N 1	3	25	30	30	0.92	
118404 BT (Welsh) 3 25 30 Y Unlimited	3	25	30	Unlimited	0.92	
118425 Global Crossing 3 25 30 Y 2	3	25	30	2	0.92	
118499 Share Communications Ltd 3 25 30 N 2	3	25	30	2	0.92	
118518 Azzurri Communications 3 25 30 N 2	3	25	30	2	0.92	
118606 BT 3 25 30 Y Unlimited	3	25	30	Unlimited	0.92	
118850 Taunton Times 3 25 30 Y 2	3	25	30	2	0.92	
118869 Telecoms World DQ 3 25 30 Y 2	3	25	30	2	0.92	
118069 JV Sport Newspapers 3 20 40 Y 2	3	20	40	2	0.98	
118500 BT 3 40 15 Y Unlimited	3	40	15	2	**0.96**	
118097 Cable & Wireless Plc 3 30 30 Y Unlimited	3	30	30	Unlimited	1.01	
118339 Cable & Wireless Plc 3 30 30 Y Unlimited	3	30	30	Unlimited	1.01	
118178 First European Telecom 3 39 19 Y 2	3	39	19	2	1.00	
118102 TelecomIT Directories 3 49 9 Y Unlimited	3	49	9	Unlimited	1.04	
118118 The Number UK Limited 3 49 9 Y Unlim	3	49	9	Unlimited	**1.04**	
118221 Singlepoint 3 49 9 Y 1	3	49	9	1	1.04	
118258 Virtual 3 49 9 Y Unlimited	3	49	9	Unlimited	1.04	
118323 Tesco Directory 3 49 9 Y 1	3	49	9	1	1.04	
118424 Citrus Telecom 3 49 9 Y 2	3	49	9	2	1.04	
118588 Corporate Communications 3 49 9 Y 1	3	49	9	1	1.04	
118723 Swains Telecom 3 49 9 Y 1	3	49	9	1	1.04	
118797 ORB Communications 3 49 9 N 2	3	49	9	2	1.04	
118815 11883 Telecom 3 49 9 N 2	3	49	9	2	1.04	
118866 118866 Ltd 3 49 9 Y Unlimited	3	49	9	Unlimited	1.04	
118338 Telecom Plus 3 35 30 N Unlimited	3	35	30	Unlimited	1.10	
118543 ICB 3 25 30 Y 1	3	35	30	2	1.10	
118141 BT (Payphone service) 3 20 (Minimum cost	3	20	60	2	1.28	
118262 Spitfire Network Services 3 59 8 Y 2	3	59	8	2	1.20	
118747 UKDA Jumbo DQ 3 59 8 Y 2	3	59	8	2	1.20	
118008 Eurotel 3 50 25 Y 2	3	50	25	2	1.30	
118090 Simunix 3 50 50 N Unlimited	3	50	50	Unlimited	1.68	
118120 Telewest 3 59 50 N Unlimited	3	59	50	Unlimited	1.84	
118739 Babel Telecom 3 100 60 Y 2	3	100	60	2	2.75	
118437 Mira Systems 3 150 30 N 1	3	150	30	1	3.21	
Tariff 3:						**0.98 Avg Charge**
Fixed charge and time charge - as well as a fixed charge for using the service, you are charged per second throughout the call.						**71 Providers**
118000 Orange 4 49 20 Y 3	4	49	20	3	0.90	
118080 Simunix 4 50 50 Not Available Yet 2	4	50	50	2	0.92	
118301 E-Guide 4 30 30 N 2	4	30	30	2	0.55	
118440 118866 Ltd 4 20 20 N 2	4	20	20	2	0.37	
Tariff 4:						**0.68 Avg Charge**
Fixed cost for first minute, with a time charge applicable for the remainder of the call.						**4 Providers**
					110.37	**0.87 Overall Average**

References:

Length of call in Minutes: 0.83333

USD Rate 6-02-04 1.83210

http://www.118tracker.com/118-costs.shtml on 5/26/04

Wireline Local DA Rates
May-04

	State	Regulatory Status [3]	Required Free DA Calls (Res)	Price per Call	Average price per call [2]
	(a)	(b)	(d)	(e)	(f)
1	Alabama	Competitive		0.95	0.95
2	Arizona	Competitive	1	1.15	0.51
3	Delaware	Competitive	0	1.25	1.25
4	Florida	Competitive		0.75	0.75
5	Florida	Competitive	3	0.60	-
6	Georgia	Competitive		1.25	1.25
7	Kansas	Competitive	0	1.25	1.25
8	Kentucky	Competitive		1.25	1.25
9	Louisiana	Competitive	1	0.85	0.38
10	Minnesota	Competitive	1	0.66	0.29
11	Mississippi	Competitive		1.00	1.00
12	New Jersey	Competitive	4	0.50	-
13	Rhode Island	Competitive	5	0.55	-
14	Tennessee	Competitive	6	0.40	-
15	Texas	Competitive	3	1.25	-
16	Utah	Competitive	0	1.25	1.25
17	Washington	Competitive	1	1.25	
18	Washington	Competitive	2	0.95	-
19	West Virginia	Competitive	2	0.70	-
20	Arkansas	Deregulated		1.25	1.25
21	Colorado	Deregulated	0	1.25	1.25
22	Idaho (Southern)	Deregulated	0	1.25	1.25
23	Indiana	Deregulated	2	1.25	-
24	Iowa	Deregulated	0	1.25	1.25
25	Michigan	Deregulated	3	0.75	-
26	Montana	Deregulated	3	0.95	-
27	Nebraska	Deregulated		1.25	1.25
28	North Dakota	Deregulated	0	1.25	1.25
29	South Dakota	Deregulated	0	1.25	1.25
30	Washington	Deregulated	1	1.25	0.56
31	Wisconsin	Deregulated	0	1.25	1.25
32	Wyoming	Deregulated	0	1.25	1.25
33	Arkansas	Partially Competitive		1.25	1.25
34	California	Partially Competitive	5	0.35	-
35	Illinois	Partially Competitive	0	1.25	1.25
36	Michigan	Partially Competitive	1	1.25	0.56
37	Nevada	Partially Competitive	3	0.85	-
38	Ohio	Partially Competitive	0	1.25	1.25
39	Wisconsin	Partially Competitive	0	0.95	0.95
40	Arizona	Regulated	2	0.50	-
41	California	Regulated	3	0.46	-
42	California - W. Coast I	Regulated	3	0.25	-
43	Connecticut	Regulated	3	0.40	-
44	Hawaii	Regulated	10	0.20	-
45	Idaho	Regulated	2	0.95	-
46	Illinois	Regulated	0	0.40	0.40
47	Indiana	Regulated	0	0.40	0.40
48	Maine	Regulated	3	0.40	-
49	Maryland	Regulated	6	0.25	-
50	Massachusetts	Regulated	10	0.34	-
51	Michigan	Regulated	3	0.50	-
52	Missouri	Regulated	30	0.63	-
53	Nevada	Regulated	3	0.50	-
54	New Hampshire	Regulated	5	0.40	-
55	New Mexico	Regulated	0	0.72	0.72
56	New York	Regulated	0	0.80	0.80

Wireline Local DA Rates
May-04

	State	Regulatory Status [3]	Required Free DA Calls (Res)	Price per Call	Average price per call [2]
	(a)	(b)	(d)	(e)	(f)
57	North Carolina	Regulated	4	0.52	-
58	North Carolina	Regulated	3	0.25	-
59	Ohio	Regulated	10	-	-
60	Oklahoma	Regulated	3	0.49	-
61	Oregon	Regulated	2	0.50	-
62	Oregon	Regulated	0	0.35	0.35
63	Pennsylvania - E	Regulated	2	0.57	-
64	Pennsylvania -W	Regulated	2	0.70	-
65	South Carolina	Regulated	2	0.40	-
66	Vermont	Regulated	3	0.64	-
67	Virginia - E	Regulated	3	0.29	-
68	Virginia -W	Regulated	3	0.29	-
69	Washington, DC	Regulated	5	0.39	-
70	Idaho (Northern)	Regulated	1	0.35	0.16
71	Kentucky			0.53	0.53
72	Ohio/Indiana			0.61	0.61
73	South Carolina		2	1.25	-

Average DA Calls [1]	**1.81**	**Average Call Allowances**	**2.4**

NOTES:

[1] 1.81 DA calls per month represents the average number of calls made per access line in the U.S. The average number of calls per month was calculated by dividing the total number of local DA calls reported by Frost & Sullivan for 2003 by the total number of switched U.S. access lines reported by the FCC as of June 30, 2003.

	3,960,000,000
	182,812,712
Average Calls	1.81

[2] If the residence call allowance is greater than the average number of calls per access line, then average price per call assumed to be zero. Otherwise, Average price per call = [(Average Number of Calls per Month per Access Line - Residence Call Allowance) * Residential Price per Call / Average Number of Calls per Month per Access Line]. Ohio (Verizon) is required to provide unlimited DA calls. We include 10 as a proxy

[3] Rate and regulatory category information provided by Bellsouth, Qwest, SBC, Telcordia, and Verizon. Note that the regulatory categories used in this summary may differ from those appearing in state legislation or regulatory rulings.

State	Type Exemptions:
Alabama	Handicapped-residence
Arizona	Special Needs- Certified Impaired Vision/Motion
Arkansas	Physical, Visual, Mental Reading Disabled, Hospital
California	Disabled, Hospital, Physically Imp-Certified
Colorado	Special Needs- Certified Impaired Vision/Motion
Connecticut	Disabled, Coin
Delaware	Hospitals, Disabled
Florida	Handicapped
Georgia	Handicapped
Hawaii	Disabled, Coin, Hospital
Idaho (Northern)	Disabled, Hospital, Special Needs-Certified Impaired Vision/Motion
Idaho (Southern)	Disabled, Hospital, Special Needs-Certified Impaired Vision/Motion
Illinois	Hotel, Motel, Hospitals, Dormitory Stations, Disabled
Indiana	Disabled, Hospitals, Area Code Request By Opr for Cust.-Long Dist., Hospital -Local, Hospital-long
Iowa	Special Needs- Certified Impaired Vision/Motion, hospitals, hotels
Kansas	Physical, Visual,Disabled, Lack of Literacy-Calling Card Provided to Disabled
Kentucky	Handicapped
Louisiana	Handicapped -- Residence & Business, Hospital, Hotel/Motel
Maine	Disabled, Coin
Maryland	Hospitals, Disabled,Not Offered-NDA-Dormitory Centrex, Hotel/Motel Guest Lines, Pay Telephone Lines Mobile Type 1 Service
Massachusetts	Exemptions: Disabled, Coin, State Govt., Political Sub-Div, Elderly, Non-Pub/Non-List Not Offered: Dormitory, Toll Denied, Hotel/Motel, Hospital, Public Access Smart-Pay Lines, Public Access Lines
Michigan	Disabled, Hospitals, Hotel, Motel,Physical/Mental Limitations-Certified

Minnesota	Special Needs- Certified Impaired Vision/Motion, Hospitals
Mississippi	Handicapped, Hospital, Hotel/Mote
Missouri	Physical, Visual, Mental Reading Disabled-Calling Card Provided
Montana	Special Needs- Certified Impaired Vision/Motion, hospitals, Handicapped - local, Handicapped - Long distance
Nebraska	Special Needs- Certified Impaired Vision/Motion
Nevada	Disabled, Coin
New Hampshire	Disabled, Coin, non-public/non-list
New Jersey	Hospitals, Disabled, Hotel/Motel, Mobile Phone
New Mexico	Special Needs- Certified Impaired Vision/Motion,hospitals, nursing homes
New York	Exemptions: Disabled, Coin Not Offered: Coin, COCOT, Coinless Coin; Inmate Public Access Lines; Hospital Patient Lines; Hotel/Motel Guest Lines; Centrex Dormitory Service; Mobile Type 1 Service
North Carolina	Handicapped, Public Telephones (1st 25 local DA calls free each month), Semipublic
North Dakota	Special Needs- Certified Impaired Vision/Motion
Ohio	Impaired-Certified, Exhtension to Phone Used by Handicapped Limit 100 Calls/Mo.No Charge, Hospital - Local, Hospital-Long, Nursing Home, Public;Semi-Pub, COCOT Telephones
Oklahoma	Physical, Visual, Mental Reading Disabled, Hospital
Oregon	Disabled, Special Needs- Certified Impaired Vision/Motion
Pennsylvania	Hospitals, Disabled, NDA-Dormitory Centrex, Hotel/Motel, Pay Telephone Lines, Mobile Type I Service
Rhode Island	Disabled, Coin, Hospital, NP/NL Credit
South Carolina	Hospitals, Hotels, Handicapped, Public Telephone (Rate 10c from "indigent" station)

South Dakota	Special Needs- Certified Impaired Vision/Motion
Tennessee	Handicapped, Elderly (>65)
Texas	Hospitals, Coin, Disabled, Physical, Visual, Mental Reading Disabled- Calling Card Provided, Public Telephone
Utah	Special Needs- Certified Impaired Vision/Motion,hospitals, nursing homes, WATs
Vermont	Disabled, Coin, Hospital
Virginia	Hospitals, Disabled, NDA-Disabled, Exception-Dorm (8 CA per 3 stations)
Washington	Disabled, Coin, Hotel, Motel, Hospital,Special Needs- Certified Impaired Vision/Motion
Washington, DC	Disabled
West Virginia	Disabled, Hospital
Wisconsin	Disabled, Blind, Hotel, Motel, Hospitals
Wyoming	Special Needs- Certified Impaired Vision/Motion

Source:
Telecordia data from File called DA Special Exemptions, Sept 2000

Directory Assistance Pricing Trends

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June 2, 2004

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Table of Contents

1. Introduction

The purpose of this paper is to assess ILEC wireline DA prices. I focus on the implications of economic factors on the expected path of DA prices as regulation is reduced or eliminated and as subsidies are reduced. The subsidies include requirements for free DA calls and/or prices below economic costs that have characterized local DA pricing under traditional regulation. I also discuss how prices have changed as competition and deregulation have progressed. In doing so, I address claims that price increases and levels under deregulation have been inconsistent with experience in other competitive telecommunications markets (as suggested by InfoNXX). Finally, I describe how experience in countries that have changed dialing codes confirms that granting the pricing flexibility needed when dialing codes were changed has led to *higher* prices in markets formerly subject to artificial regulatory pricing constraints.

2. Summary of Conclusions

The competitive standard for pricing telecommunications services should reflect the economics of the industry. That is, the standard should recognize that (1) telecommunications firms have high fixed costs for individual services including DA, as well as substantial shared and common costs; and (2) in such conditions, competitive firms charge prices that lie between incremental costs for each service and the stand-alone cost of each service. Thus, given that regulation has typically held DA prices below even direct incremental costs—e.g., by requiring free DA calls and/or by setting rates for additional DA calls at levels that result in revenues that are not sufficient to cover total incremental costs for DA services—we would expect to see prices increase over time as states have reduced or eliminated regulation of DA prices.

Price trends for ILEC DA services are consistent with competitively determined prices in multi-product industries characterized by high fixed costs and substantial common costs. Although prices have increased as state regulators have reduced regulation in some jurisdictions, the increase in DA prices on average in the US has been about the same as the increase in overall consumer prices from year end 1995 through year end 2003—as both have risen by about 20 percent or only about 2.3 percent per year. Prices for local residence service have also increased as regulators have rebalanced rates to offset reductions in carrier access charges and to accommodate increased competition for local services. Both examples of price increases have come as competition *increased* and both reflect that competition can drive rates higher for some consumers of some services that were historically priced below cost.

Nevertheless, the average effective price for ILEC DA calls is substantially below DA rates in countries that have implemented dialing changes like those sought by InfoNXX. Moreover, ILEC local DA prices in areas that have reduced regulation of DA rates are lower on average than DA rates in these countries. Finally, experience in other countries confirms that allowing entry and providing the required pricing flexibility has lead to higher rates in cases in which regulatory constraints formerly kept DA prices at artificially low levels.

3. Price Increases under Deregulation Are Consistent with Economic Factors

3.1. ILEC Service Provision Involves Fixed, Shared and Common Costs

To understand price patterns for DA service, it is useful to consider some basic economic concepts. First, firms generally incur fixed and variable costs. *Fixed costs*, in economics, are forward-looking costs that do not vary as service output changes. In contrast, *variable costs* are forward-looking costs that vary with the volume of service. The key type of variable costs for our purposes are incremental costs—the additional cost of supplying an additional increment of output. Multi-product firms like ILECs may incur three types of fixed costs:

1. *Service-specific fixed costs* associated with the supply of a particular service. Such costs are independent of the volume of the service. A firm supplying *any* level of the service would incur those fixed costs, but would avoid those costs altogether by simply ceasing production of the service.

2. *Shared fixed costs* associated with the supply by a firm of a group of services comprising more than one, but less than all, of its services. Such costs do not vary with either the level of any individual service in the group or the decision to produce or cease producing any service or subset of services within the group. For example, the cost of software right-to-use fees is a shared-fixed cost for switched services.

3. *Common fixed costs* not associated with a specific service or group of services. Instead, these fixed costs are shared by *all* services produced by the firm. These "overhead" costs include the costs of Human Resources, Finance, etc., that are not related to any individual service but are incurred as a function of being in business.

Second, in the presence of these types of fixed costs, incremental cost only defines the *price floor* for a service, i.e., the level below which price cannot fall. The economically efficient price, however, would typically have to exceed the price floor because fixed costs (service-specific or shared/common) cannot be recovered fully by setting service prices *equal* to their respective incremental costs. For the firm in these circumstances to stay viable, it must be able to set service prices that, collectively, recover all of its costs. Only prices set in excess of incremental costs can accomplish this.[1]

Third, multi-product firms consider stand-alone costs when making pricing decisions. These costs are the costs that would be incurred by an efficient entrant if it were to decide to produce only the service (or a specified set of services)—i.e., the cost to produce just the service(s), "standing alone."[2] Stand-alone costs set a ceiling on the prices that a firm would charge for a given service or group of services because charging rates above stand-alone costs would attract entry and ultimately reduce profits.[3]

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[1] As Baumol and Sidak state in *Competition in Local Telephony* (1994) (at p. 34), "if the firm's production process is subject to economies of scale, then the requirement that prices be set equal to marginal costs is a recipe for bankruptcy.... By its very definition, however, fixed cost is a cost whose amount does not change when output varies. Hence, a price equal to marginal cost, which is the addition to total cost resulting from an output change, cannot include any contribution to fixed cost."

[2] Baumol and Sidak, at p. 58.

ILEC provision of DA services involves service specific fixed costs associated with developing and maintaining the DA database and operator service infrastructure—e.g., calling centers and transport connections to those calling centers. DA services also involve shared and common costs arising from the fact that DA services are produced as part of much larger set of telecommunications services. In these circumstances, the relevant pricing standard recognizes that firms in unregulated competitive markets are constrained to charge rates that exceed incremental costs but are below the stand-alone costs of each service and group of services that they produce. In unregulated, competitive markets, they will not charge rates below incremental cost because doing so would generate losses and risk antitrust violations. They will also not charge rates above stand-alone costs because doing so will attract entry by firms that could undercut the price of the incumbent.[4]

3.2. Economic Factors Imply That DA Prices Should Rise as Regulation Is Diminished

Given the fixed, shared and common costs involved in production of DA services, the range of prices *consistent with efficient competitive behavior* following pricing deregulation is likely to be broad—from the lowest possible prices that will just cover the incremental costs of DA service provision to substantially higher prices that will cover incremental costs plus a market-determined contribution to the shared and common costs of providing DA services and the other services produced by the firm. Moreover, since the stand-alone cost of DA service would include the cost of developing and continually updating the database and the infrastructure needed for the service, the upper bound on prices consistent with pricing in unregulated competitive markets is likely to be substantially above current prices for ILEC DA services.

To the extent that regulation has held prices for DA service at subsidized rates—below even incremental costs especially for the "free" DA inquiries included with residence DA services—we would therefore expect prices to rise to cover at least incremental cost plus some amount of shared and common costs of the firm.

4. Changes in LEC DA Prices Are Consistent with Competitively Determined Prices in Multi-product Industries

InfoNXX, has stated that wireline DA prices have been *increasing* since the 1996 Act, whereas all other telecommunications prices have been declining. We would expect (and want) to see prices increase for DA services and others for which regulation has held prices at artificially low rates as competition replaces regulation, and market forces drive out subsidies and raise inefficiently low prices to competitive levels. According to the PPI data relied on by InfoNXX[5] DA prices increased by about 20 percent from June 1995 through June 2003. More recent PPI data show that DA prices stayed at the June 2003 level through year-end 2003. Thus, the PPI data imply that DA prices have increased by an average of only about 2.3 percent per year from year-end 1995 through year-end 2003. Over the same time period the general rate of consumer

[3] Baumol and Sidak, at p. 78.

[4] Baumol and Sidak, at p. 78.

[5] These data for Directory Assistance (BLS 4813#11401) were presented in an InfoNXX chart entitled "FCC Retail DA Proceeding: Producer Price Indices for Telecommunications."

inflation was also about 20 percent or 2.3 percent per year; thus, adjusted for inflation DA prices have not increased since the 1996 Act was implemented.

Higher nominal rates for DA are to be expected as more and more states have found that DA services face sufficient competition to either deregulate completely or reclassify as competitive and grant some pricing flexibility.[6] And, as can be seen from the following table, the pattern reflects a move to more economically efficient rates, since effective prices—i.e., prices that take account of the "free" calling allowance—for DA services in areas of states with continuing regulation are clearly below cost for customers with average usage levels. Indeed, effective average DA prices are free in 24 of the 31 jurisdictions in which DA services are still subject to full state regulation because calling allowances require LECs to give away DA calls to customers who make $\leq$ the average number of DA calls.

It is also worth noting that local residence rates have increased since the Telecom Act even though competition has grown considerably for residence customers—as states have implemented the Act and CLECs have captured millions of local residence customers.[7] This likely reflects the reduction of subsidies that must accompany the transition from regulation to competition as the mechanism for governing prices. The accompanying reduction in toll rates also reflects rebalancing of telecommunications rates as regulators have reduced switched carrier access rates closer to costs.[8] Note, however, that even toll rates remain well above incremental costs because carriers must recover their joint and common costs and make enough profit to invest in innovation and new infrastructure.

Table 1: ILEC Local Residence DA Rates by Regulatory Status, March 2004

Regulatory Category	Number of Observations[1]	Average Price per Call[2]	Average Required Free DA Calls
Competitive Price Regulation[3]	39	$0.70	1.2

[6] As of May 2004, regulators had reclassified RBOC DA as competitive or as partially competitive or deregulated DA services completely in 40 service areas. The four RBOCs provided data on rates and regulatory status for 72 service areas.

[7] According to the Bureau of Labor Statistics local residence service PPI, residence local rates increased by about 8 percent from year-end 1999 to year-end 2003. See: Wired telecommunications carriers; Residence local service; Series ID: PCU517110517110111, http://data.blsgov/servlet/SurveyOutputServlet?jrunsessionid=1086123388915226462, Accessed June 1, 2004. According to CPI data, residence local service prices increased by about 26.5 percent over the same time period. See US City Average Land-line telephone services, local charges, series id CUUR0000SEED01. The larger increase appears to be because the CPI includes various non-recurring charges and surcharges, and taxes not included in the PPI. Sampling differences are also present.

[8] *See Access Charge Reform*, CC Docket No. 96-262, Sixth Report and Order, 15 FCC Rcd 12962, 13029, para.162 (2000) (*CALLS Order*), aff'd in part, rev'd in part, and remanded in part, *Texas Office of Public Utilities Counsel v. FCC*, 265 F.3d 313 (5th Cir. 2001) (*Texas Office of Public Utilities Counsel v. FCC*) (reversing and remanding two issues, unrelated to ATS rate levels, for further analysis and explanation), cert. denied, *Nat'l Ass'n of State Util. Consumer Advocates v. FCC*, 122 S. Ct. 1537 (2002).

Regulated	31	0.09	4.1
Not Specified	3	0.38	0.7
Total	**73**	**$0.43**	**2.4**

Sources and Notes:
Rate and regulatory category information provided by, Bellsouth, Qwest, SBC, Telcordia, and Verizon. Note that the regulatory categories used in this summary may differ from those appearing in state legislation or regulatory rulings.

[1] A number of states have more than one regulatory regime. Hence, the number of observations does not reflect the number of states in the sample.

[2] If the residence call allowance is greater than the average number of calls per access line, then average price per call assumed to be zero. Otherwise, Average price per call = [(Average Number of Calls per Month per Access Line - Residence Call Allowance) * Residential Price per Call / Average Number of Calls per Month per Access Line]. The average number of calls made per access line in the U.S.—1.81 DA calls per month—calculated by dividing the total number of local DA calls reported by Frost & Sullivan for 2003 by the total number of switched U.S. access lines reported by the FCC as of June 31, 2003. See Frost & Sullivan, "Trends in US Directory Assistance Service Markets," December 2003, p. 32; and Federal Communications Commission Common Carrier Bureau Industry Analysis Division, "Local Telephone Competition: Status as of June 30, 2003," Table 1 (December 2003).

[3] This category includes areas in which DA service has been classified as competitive, partially competitive or completely deregulated.

The reasonableness of ILEC residence DA rates is further demonstrated by comparisons with four benchmarks: (1) IXC DA rates, (2) wireless DA rates, and (3) European DA rates in countries that have implemented dialing changes of like those sought by InfoNXX. As shown by the following table, the average ILEC rate in areas with competitive price regulation is:

- Lower than that charged by many IXCs that face competition from ILEC DA services as well as from wireless DA and the Internet;
- Lower than that charged by wireless companies for DA services, although wireless DA providers offer some enhancements not generally available from wireline DA providers; and
- Lower than the average prices charged in EU countries that have implemented "dialing parity" for DA services.

Table 2: ILEC Local Rates Compared to Benchmarks

	Average $ Per DA Call	Range $ Per DA Call	
		Low	High
ILEC Competitive Price Regulation	$0.70	$0.00	$1.25
ILEC Overall Average	$0.43	$0.00	$1.25
US IXC[9]	$1.64	$0.75	$2.49
US Wireless Mobile[10]	$1.21	$0.99	$1.29
UK DA Rates[11]	$0.87	$0.44	$3.21
European DA Rates[12]	$1.14	$0.56	$1.52

[9] Five observations; includes rates for AT&T, MCI, 10-10-9000, Sprint, and WorldXChange. AT&T and 10-10-9000 include up to two requests per call; call completion is also included with these services. Usage charges for the completed call are extra.

[10] Five observations; includes rates for AT&T Wireless, Cingular, Nextel, Sprint PCS, and T-Mobile. Rates for Sprint PCS includes up to three requests per call; call completion included with all wireless services. Costs for the call itself may be extra.

Finally, DA rates have increased in countries that have implemented the dialing changes sought by InfoNXX. BT's rates for DQ services were about 40 pence ($0.73) for two inquiries before the dialing code change, but are now at about 53 pence ($0.96); and the average for all UK providers is about $0.87 per call. "In Germany, one of the largest and most competitive markets, call volume is shrinking by 10% per year. Reasons that are given for this decrease are recent price increases for directory enquiry calls to better reflect costs, and the emergence of online directories."[13] In Ireland, rates were also increased after the new dialing codes were introduced. The incumbent's rates were only about 0.34 euros ($0.42) for three inquiries (with a call allowance of two free calls per month), and now the average is 0.48 euros ($0.59). Since the average price per DA call prior to the numbering change would have to factor in the two free DA calls, the actual increase is likely to be much larger than indicated by the $0.17 difference in the rate for billed DA calls.

The data above for both the US and European DA providers reflect the impact of competitive markets. In regulated markets, we have seen DA rates have been set at artificially low levels. Thus, when DA services are opened to competitive DA providers, we should expect to see rates increase, as mandates for required "free" or subsidized DA calls are not compatible with competition and deregulation.

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[11] United Kingdom rates average of charges reported on www.118tracker.com/118-costs.shtml, accessed 5-26-04. United Kingdom rates assume a call length of 50 seconds. Rates have been converted into US dollars based on British Pound spot exchange rates reported by Bloomberg LP on June 2 2004.

[12] Includes four countries (besides the UK) that had implemented dialing code changes: Austria, Germany, Ireland, and Sweden. Denmark, Italy, Switzerland were in the process of liberalizing their countries' directory assistance systems; and, Luxembourg, Spain and Norway had liberalized dialing codes but average rate data were not available. France excluded because incumbent retains short code. Rates for other countries obtained from Kathleen Pierz, The Kelsey Group, "Competition: Off to the Races or into the Trenches? (White Paper #02-06)" (October 23, 2002). Other international regulatory status information obtained from Analysys Consulting, "Regulatory Framework and Market Developments Concerning Directory Services in EU and EEA Member States (Analysys Final Report No. 02-226)" (September 27, 2002). Rates have been converted into US dollars based on Euro spot exchange rates reported by Bloomberg LP on June 2 2004.

[13] Final Report for the European Commission: Regulatory Framework and Market Developments Concerning Directory Services in EU and EEA Member States, Analysys, Final Report No. 02-226 27 September 2002.

BACKGROUND AND EXPERIENCE

Harold Ware is Vice President of National Economic Research Associates, Inc. ("NERA"). He has studied the telecommunications industry for over 25 years. Since joining NERA, he has directed studies and prepared testimony for regulatory proceedings and antitrust cases. His recent research has focused on: studies of competition in the directory assistance, local, interexchange, Centrex/PBX, and private line markets; studies of costs, pricing, and entry policy, and universal service issues associated with the transition to competition; analyses of competitive effects of mergers in wireless telecommunications and between telephone and cable TV companies; and analyses of the planning and deployment of new technology in telecommunications networks. He has also studied competition and demand for postal services and the impact of postal rate changes. He has testified before state regulatory commissions and the U.S. Postal Rate Commission, and filed affidavit testimony before the FCC and the Department of Justice. He also directed and was coauthor of an international comparison of regulation and competition submitted by Telecom New Zealand to the New Zealand Ministerial Inquiry into Telecommunications.

He received a B.A. *cum laude* in Economics from the State University of New York at Stony Brook, and M.A. and Ph.D. degrees in Economics from Cornell University. While pursuing his graduate studies at Cornell, he taught courses in economics and industrial organization and did research on cellular mobile communications in the Technology Assessment Project of the Program on Science, Technology, and Society. His articles have been published in *Public Utilities Fortnightly, The Journal of Regulatory Economics, IEEE Communications,* proceedings of the *Fifth* and *Seventeenth Annual Telecommunication Policy Research Conferences*, and in *Managing Change in the Postal and Delivery Industries.* He am also co-author of three chapters of *Communications for a Mobile Society: An Assessment of New Technology.*

NERA Economic Consulting is an international firm of economists who understand how markets work. Our clients include corporations, governments, law firms, regulatory agencies, trade associations and international agencies. Our global team of 500 professionals operates in 16 offices across North and South America, Europe, Asia and Australia. Founded in 1961 as National Economic Research Associates, our more than 40 years of practical experience creating strategies, studies, reports, expert testimony and policy recommendations reflects our specialization in industrial and financial economics.

NERA's telecommunications practice is a key participant in the important regulatory, legislative and competitive issues inherent in today's communications industry sectors. NERA advises companies on regulatory and competitive strategy, helps to negotiate interconnection and access charges, and presents testimony and affidavits to regulatory agencies around the world. We advise governments worldwide on privatization, market mechanisms and the design of regulatory regimes.

We also advise governments on the design and implementation of auctions for spectrum allocation and work with bidders to design and execute winning strategies. NERA economists have been involved in nearly every spectrum auction ever completed—working either on behalf

of the government or other entity sponsoring the auction, or one of its private bidders.

Clients needing strategic advice on market demand, cost, pricing and strategy also turn to NERA. As new technologies and competitive market structures transform their industry around the world, communications firms face expanding challenges and opportunities. Issues of entry into new markets and market power have now joined decades-old matters of costs, demand and rates. The tools and insights of microeconomics are critical in addressing these issues. We have earned an outstanding reputation for compelling quantitative analysis, persuasive testimony, and skill under cross-examination.